What is claimed is:

1. An apparatus for changing the playback rate of recorded speech comprising:

memory storing at least one recorded speech message; and

a playback module receiving input specifying a recorded speech message in said memory to be played and the rate at which said specified speech message is to be played back, said playback module using a set of decision rules to modify the specified speech message to be played back based on features of the specified speech message and the specified playback rate prior to playing back said recorded speech message, said features being based on jitter states of said specified speech message.

2. An apparatus according to claim 1 wherein the input specifying said playback rate is user selectable.

3. An apparatus according to claim 2 wherein the input specifying said recorded speech message is generated by an interactive voice response system.

4. An apparatus according to claim 1 wherein said playback module includes:

a decision processor generating speech modifying actions based on speech frame parameters of said specified speech message and said specified playback rate using decision rules from said set; and

a signal processor modifying said specified speech message in accordance with said speech modifying actions.

5. An apparatus according to claim 4 wherein said speech frame parameters include apparent periodicity period P_t, frame energy E_t and speech periodicity β.

6. An apparatus according to claim 5 wherein said decision processor classifies each of said speech frame parameters into decision regions and uses the classified speech frame parameters to determine the states of periodicity period jitter, the energy jitter and periodicity strength jitter, said speech modifying actions being based on said determined jitter states.

7. An apparatus according to claim 6 wherein said decision regions are fuzzy regions, the determined states being identified by said decision processor using fuzzy logic and the speech modifying actions being generated by said decision processor using fuzzy rules.

8. An apparatus according to claim 6 wherein said decision regions are divided using a neural network having input neurons and output neurons and wherein said speech frame parameters are connected to input neurons of said neural network, said speech modifying actions being determined by the output neurons of said neural network.

9. An apparatus according to claim 2 wherein said playback module includes:

a decision processor generating speech modifying actions based on speech frame parameters of said specified speech message and said specified playback rate using decision rules from said set; and

a signal processor modifying said specified speech message in accordance with said speech modifying actions.

10. An apparatus according to claim 9 wherein said speech frame parameters include apparent periodicity period P_t, frame energy E_t and speech periodicity β.

11. An apparatus according to claim 10 wherein said decision processor classifies each of said speech frame parameters into decision regions and uses the classified speech frame parameters to determine the

states of periodicity period jitter, the energy jitter and periodicity strength jitter, said speech modifying actions being based on said determined jitter states.

12. An apparatus for changing the playback rate of recorded speech comprising:

memory storing a plurality of recorded speech messages and a plurality of feature tables, each feature table being associated with an individual one of said speech messages and including speech frame parameters based on the jitter states of speech frames of said associated speech message; and

a playback module receiving input specifying a recorded speech message in said memory to be played and the rate at which said recorded speech message is to be played back, said playback module using a set of decision rules to modify the specified speech message to be played back based on the speech frame parameters in the feature table associated with the specified speech message and the specified playback rate prior to playing back said specified speech message.

13. An apparatus according to claim 12 wherein the input specifying said playback rate is user selectable.

14. An apparatus according to claim 13 wherein the input specifying said recorded speech message is generated by an interactive voice response system.

15. An apparatus according to claim 12 wherein said playback module includes:

a decision processor generating speech modifying actions based on the speech frame parameters and said specified playback rate using decision rules from said set; and

a signal processor modifying said specified speech message in accordance with said speech modifying actions.

16. An apparatus according to claim 15 wherein said speech frame parameters include apparent periodicity period P_t, frame energy E_t and speech periodicity β.

17. An apparatus according to claim 16 wherein said decision processor classifies each of said speech frame parameters into decision regions and uses the classified speech frame parameters to determine the states of periodicity period jitter, the energy jitter and periodicity strength jitter, said speech modifying actions being based on said determined jitter states.

18. An apparatus according to claim 17 wherein said apparatus further includes a feature extraction module, said feature extraction module creating said feature tables based on said recorded speech messages.

19. An apparatus according to claim 18 wherein said feature extraction module is responsive to an interactive voice response system.

20. An apparatus according to claim 19 wherein during creation of each feature table, said feature extraction module divides the associated recorded speech message into speech frames, computes the apparent periodicity period, the frame energy and the speech periodicity for each speech frame and compares the computed apparent periodicity period, the frame energy and the speech periodicity with corresponding parameters of neighbouring speech frames to yield said speech frame parameters.

21. An apparatus according to claim 13 wherein said playback module includes:

a decision processor generating speech modifying actions based on the speech frame parameters and said specified playback rate using decision rules from said set; and

a signal processor modifying said specified speech message in accordance with said speech modifying actions.

22. An apparatus according to claim 21 wherein said speech frame parameters include apparent periodicity period P_t, frame energy E_t and speech periodicity β.

23. An apparatus according to claim 22 wherein said decision processor classifies each of said speech frame parameters into decision regions and uses the classified speech frame parameters to determine the states of periodicity period jitter, the energy jitter and periodicity strength jitter, said speech modifying actions being based on said determined jitter states.

24. An apparatus according to claim 12 wherein said apparatus further includes a feature extraction module, said feature extraction module creating said feature tables based on said recorded speech messages.

25. An apparatus according to claim 24 wherein said feature extraction module is responsive to an interactive voice response system.

26. A method of changing the playback rate of a recorded speech message in response to a user selected playback rate command comprising the steps of:

using a set of decision rules to modify the recorded speech message to be played back based on jitter states of the recorded speech message and the user selected playback rate command; and

playing back the modified recorded speech message.